

granuphilin (H-255): sc-292306

BACKGROUND

Granuphilin, also designated synaptotagmin-like protein 4 or exophilin 2, is a member of the synaptotagmin-like protein family. In rodents, two isoforms have been characterized as granuphilin-a and granuphilin-b, and alternative splicing in human has also been described. Granuphilin-b is a shorter isoform which contains a different C-terminal sequence than the longer isoform. Granuphilin is part of a ternary complex consisting of Syntaxin 1A (STX1A) and Rab 27A. The interaction between granuphilin and Syntaxin 1A on the plasma membrane is regulated by Rab 27A. Granuphilin is a peripheral membrane protein mainly expressed in pancreatic β -cells and in the pituitary gland. It has been detected on secretory granules and close to the plasma membrane. In the pancreas, granuphilin interacts with Insulin-containing vesicles while in both the pancreas and pituitary, granuphilin modulates the secretion of hormones and the exocytosis of dense-core granules. Overexpression of granuphilin enhances basal Insulin secretion but also inhibits high K^+ -induced Insulin secretion. The effect of granuphilin on Insulin secretion may be impaired by a mutation that disrupts the binding to either Rab 27A or Syntaxin 1A, making granuphilin a possible regulator in the exocytotic pathway.

REFERENCES

1. Torii, S., Zhao, S., Yi, Z., Takeuchi, T. and Izumi, T. 2002. Granuphilin modulates the exocytosis of secretory granules through interaction with Syntaxin 1A. *Mol. Cell. Biol.* 22: 5518-5526.
2. Coppola, T., Frantz, C., Perret-Menoud, V., Gattesco, S., Hirling, H. and Regazzi, R. 2002. Pancreatic β -cell protein granuphilin binds Rab 3 and Munc18 and controls exocytosis. *Mol. Biol. Cell* 13: 1906-1915.
3. Izumi, T., Gomi, H. and Torii, S. 2005. Functional analysis of Rab 27A effector granuphilin in Insulin exocytosis. *Methods Enzymol.* 403: 216-229.
4. Gomi, H., Mizutani, S., Kasai, K., Itohara, S. and Izumi, T. 2005. Granuphilin molecularly docks Insulin granules to the fusion machinery. *J. Cell Biol.* 171: 99-109.
5. Fukuda, M., Imai, A., Nashida, T. and Shimomura, H. 2005. Slp4-a/granuphilin-a interacts with syntaxin-2/3 in a Munc18-2-dependent manner. *J. Biol. Chem.* 280: 39175-39184.
6. SWISS-PROT/TrEMBL (Q96C24). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: SYTL4 (human) mapping to Xq22.1; Sytl4 (mouse) mapping to X E3.

SOURCE

granuphilin (H-255) is a rabbit polyclonal antibody raised against amino acids 44-298 mapping near the N-terminus of granuphilin of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

granuphilin (H-255) is recommended for detection of granuphilin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

granuphilin (H-255) is also recommended for detection of granuphilin in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for granuphilin siRNA (h): sc-45507, granuphilin siRNA (m): sc-45508, granuphilin shRNA Plasmid (h): sc-45507-SH, granuphilin shRNA Plasmid (m): sc-45508-SH, granuphilin shRNA (h) Lentiviral Particles: sc-45507-V and granuphilin shRNA (m) Lentiviral Particles: sc-45508-V.

Molecular Weight of granuphilin-a: 79 kDa.

Molecular Weight of granuphilin-b: 59 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.